

SPOROBOLUS HETEROLEPIS (POACEAE),  
NEW TO TENNESSEE

Dwayne Estes

The University of Tennessee  
Department of Botany  
437 Hesler Biology Building  
Knoxville, Tennessee 37996-1100, U.S.A.  
tnplants@yahoo.com

John Beck

The University of Tennessee  
Department of Botany  
437 Hesler Biology Building  
Knoxville, Tennessee 37996-1100, U.S.A.  
jbeck1@utk.edu

ABSTRACT

*Sporobolus heterolepis* (Poaceae) is reported as a new addition to the flora of Tennessee. This species is a very rare component of limestone cedar glades and barrens in the central portion of the state. The Tennessee Natural Heritage Program is currently tracking it as a species of special concern.

RESUMEN

Se cita *Sporobolus heterolepis* (Poaceae) como una nueva adición a la flora de Tennessee. Esta especie es un componente muy raro de los claros en los bosques de cedros sobre calizas y lugares áridos en la porción central del estado. El Tennessee Natural Heritage Program está haciéndole actualmente un seguimiento como especie de especial preocupación.

*Sporobolus* R. Br. is a genus of ca. 100-160 species found nearly throughout the tropical and warm-temperate regions of the world (Yatskievych 1999). Chester et al. (1993) listed nine species and infraspecific taxa for Tennessee, including eight natives. In the autumn of 2003, while conducting fieldwork in the limestone cedar glades of middle Tennessee, we discovered a small population of *Sporobolus heterolepis* (A. Gray) A. Gray (prairie dropseed), a species previously unknown from the state.

Voucher specimen: **U.S.A. TENNESSEE. Rutherford Co.:** Interior Low Plateau Physiographic Province, Central Basin Section, Inner Central Basin Subsection, ca. 7.5 km E of Murfreesboro. Flat Rock Cedar Glades and Barrens State Natural Area, growing near edges and among shrub islands of gravely limestone cedar barrens and glades, 28 Sep 2003, D. Estes 05437, 05438 with J. Beck (TENN).

*Sporobolus heterolepis* is a perennial, tussock-forming species of prairies, dry woods, glades, savannas, and other open habitats (Yatskievych 1999). The species ranges from southern Canada (Ontario, Quebec, Saskatchewan) south to Georgia and New Mexico (United States Department of Agriculture 2000). Although widely distributed across central and eastern North America, it is most frequent in a large area of the Midwest from the Dakotas to the western Great Lakes region south to the Ozarks. Prairie dropseed is considered locally rare throughout much of its range. For example, it is presumed extirpated in Massachusetts and considered critically imperiled in Quebec, as well as in Connecticut, Georgia,

Kentucky, Maryland, North Carolina, Pennsylvania, Virginia, and Wyoming (Nature Serve Explorer 2004). In Illinois, New York, and Ohio, *S. heterolepis* is an imperiled species, and it is considered vulnerable in Michigan, Ontario, and Saskatchewan (Nature Serve Explorer 2004).

All of the individuals we discovered were located on Flat Rock Cedar Glades and Barrens State Natural Area. The Natural Area, cooperatively managed by The Nature Conservancy and the Tennessee Department of Environment and Conservation's Natural Heritage Program, is one of the largest cedar glade preserves in the southeastern United States with over 400 ha (The Nature Conservancy 2004). Five tussocks were found at the edge of high quality limestone cedar barrens and among shrub islands within the glades (Fig. 1).

Interestingly, the Natural Area is home to several rare limestone cedar glade endemics and western disjuncts. Notable glade endemics or near-endemics known to occur on the nearby glades and barrens include *Aster prickeae* Britt., *Astragalus bibulatus* Barneby & Bridges, *A. tennesseensis* A. Gray ex Chapman, *Dalea gattingeri* (Heller) Barneby, *Delphinium carolinianum* Walt. ssp. *calciphilum* Warnock, *Onosmodium molle* Michx. ssp. *molle*, *Pediomelum subcaule* (Torr. & A. Gray) Rydb. and *Solidago gattingeri* Chapman. Rare western disjuncts known from the vicinity, some in association with the *Sporobolus*, include *Ammoselinum popei* Torr. & A. Gray, *Dalea purpurea* Vent., and *Oenothera macrocarpa* Nutt. Native grasses such as *Andropogon gerardii* Vitman, *Bouteloua curtipendula* (Michx.) Torr., *Schizachyrium scoparium* (Michx.) Nash, *Sorghastrum nutans* (L.) Nash. and *Sporobolus vaginiflorus* (Torr. ex A. Gray) Wood var. *vaginiflorus* were also common associates.

The Rutherford County population is significantly disjunct from all other known populations. The nearest is located ca. 140 km to the southeast in cedar glades of Chickamauga and Chattanooga National Military Park, Catoosa County, northwestern Georgia (J. Allison, Georgia Natural Heritage Program, pers. comm.). The next closest populations are located ca. 220 km to the northwest and ca. 230 km to the north-northeast in Crittenden and Bullitt counties, Kentucky, respectively (J.J.N. Campbell, The Nature Conservancy, pers. comm.).

Approximately one week after our discovery of *S. heterolepis* in Tennessee, Al Good and Todd Crabtree, members of the Tennessee Native Plant Society who were unaware of our find, independently discovered two additional sites on nearby barrens in the Natural Area (pers. comm.). The Tennessee Division of Natural Heritage has been informed of the presence of *S. heterolepis* in the state and is now tracking it as a species of special concern. It is quite remarkable that given all the attention that the glades of Middle Tennessee have received over the last fifty plus years, especially those in the vicinity of the Natural Area, that this species has only now been discovered in the state.



FIG. 1. **Upper photo:** clump of *Sporobolus heterolepis* (arrow) among shrub island in cedar glade at Flat Rock Cedar Glades and Barrens State Natural Area, Rutherford County, Tennessee, 28 September 2003. **Lower photo:** close-up of *S. heterolepis* at edge of cedar barren, same date.

## ACKNOWLEDGMENTS

We wish to thank Forrest Evans, Stewardship Ecologist with the Tennessee Natural Heritage Program, and Sally Rollins Palmer, ILP Program Manager with the Tennessee Chapter of The Nature Conservancy for reviewing this manuscript. Gene Wofford and an anonymous reviewer also reviewed the paper. The Breedlove-Dennis Fund and the University of Tennessee Department of Botany provided funding for travel. Hal DeSelm, retired botany professor at the University of Tennessee confirmed our identification. Lastly, we extend a sincere thanks to Gene Wofford, curator at the University of Tennessee Herbarium, for continued support and appreciation of our collecting efforts.

## REFERENCES

- CHESTER, E.W., B.E. WOFFORD, R. KRAJ, H.R. DI SELM, and A.M. EVANS. 1993. Atlas of Tennessee vascular plants. Volume 1. Pteridophytes, gymnosperms, angiosperms: monocots. Misc. Publ. No. 9. The Center for Field Biology, Austin Peay State University, Clarksville, Tennessee.
- NATURESERVE. EXPLORER: AN ONLINE ENCYCLOPEDIA OF LIFE [web application]. 2004. Version 3.1. NatureServe, Arlington, Virginia. Available [www.natureserve.org/explorer](http://www.natureserve.org/explorer). (Accessed: 24 June 2004).
- THE NATURE CONSERVANCY. 2004. Nature Conservancy celebrates 25th anniversary in Tennessee. Available [nature.org/wherewework/northamerica/states/tennessee/press/press1224.html](http://nature.org/wherewework/northamerica/states/tennessee/press/press1224.html). (Accessed: 24 June 2004).
- USDA (UNITED STATES DEPARTMENT OF AGRICULTURE). 2000. Natural Resources Conservation Service. The PLANTS database ([plants.usda.gov/plants/](http://plants.usda.gov/plants/)). National Plant Data Center, Baton Rouge, Louisiana (Accessed: 24 June 2004).
- YATSKIEVICH, G. 1999. Steyermark's flora of Missouri. Volume 1. Revised edition. The Missouri Botanical Garden Press, St. Louis.